

## INTERNATIONAL SEARCH REPORT

IB2004/052857

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 G01R31/30 G01R33/09 G01R15/20 G11C11/15

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01R G11C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, INSPEC, IBM-TDB

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 300 617 B1 (DAUGHTON JAMES M ET AL) 9 October 2001 (2001-10-09)	1-3,6-9, 15-21, 23,24, 30-33 20
Y	abstract; figures 1A,2b,4 column 4, line 16 - column 7, line 6 column 10, line 50 - column 13, line 29 -----	
A	PELEGRI J ET AL: "Spin-valve current sensor for industrial applications" SENSORS AND ACTUATORS A, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 105, no. 2, 15 July 2003 (2003-07-15), pages 132-136, XP004428582 ISSN: 0924-4247 abstract; figures 1-3 page 1 -----	1-28,303
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

29 March 2005

Date of mailing of the international search report

11. 02. 2005

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

IB2004/052857

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 144 214 A (ATHAN ET AL) 7 November 2000 (2000-11-07)	20
A	abstract	1-28, 30-33
	-----	
A	EP 0 710 850 A (INTERNATIONAL BUSINESS MACHINES CORPORATION) 8 May 1996 (1996-05-08)	1-28, 30-33
	abstract	
	-----	
A	US 5 708 407 A (MOUCHOT ET AL) 13 January 1998 (1998-01-13) cited in the application	1-28, 30-33
	abstract	
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**Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-28, 30-33

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-28,30--33

These Claims concern methods and apparatus for built-in current measurements in a semiconductor device (by using a magnetic tunnel junction)

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2. claim: 29

This Claim concerns a software product for job management comprising the step of measuring currents and setting a flag.

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# INTERNATIONAL SEARCH REPORT

IB2004/052857

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 6300617	B1	09-10-2001	AU	2897099 A	20-09-1999
			CA	2320311 A1	10-09-1999
			EP	1068541 A1	17-01-2001
			JP	2003526083 T	02-09-2003
			WO	9945405 A1	10-09-1999
-----					
US 6144214	A	07-11-2000	AU	7736396 A	05-06-1997
			WO	9718481 A1	22-05-1997
-----					
EP 0710850	A	08-05-1996	US	5561368 A	01-10-1996
			AT	289419 T	15-03-2005
			AU	1788295 A	09-05-1996
			BR	9504583 A	20-05-1997
			CA	2158304 A1	05-05-1996
			CN	1113572 A ,C	20-12-1995
			DE	69534013 D1	24-03-2005
			EP	0710850 A2	08-05-1996
			JP	3017061 B2	06-03-2000
			JP	8226960 A	03-09-1996
			KR	175979 B1	01-04-1999
			TW	487169 Y	11-05-2002
-----					
US 5708407	A	13-01-1998	FR	2710753 A1	07-04-1995
			DE	69407194 D1	15-01-1998
			DE	69407194 T2	28-05-1998
			EP	0721670 A1	17-07-1996
			WO	9509447 A1	06-04-1995
			JP	9503297 T	31-03-1997
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